DISTRIBUTED COMPUTER MONITORING SYSTEM AND METHODS FOR AUTONOMOUS COMPUTER MANAGEMENT

I CLAIM:

1. A distributed system for monitoring the resources and events of each of a plurality of networked computers, the system comprising:

    (a)   a first database associated with a first computer, said first database recording both a first data element and a second data element, wherein each of the first and second data elements comprise information about a current state of the first computer at a given time; and

    (b)   a first agent executing on said first computer comparing the first and second data elements in order to assess the occurrence of an exceptional event.

2. The system of claim 1 wherein the first and second data elements comprise information about a resource of the system.

3. The system of claim 1 wherein the first and second data elements comprise information about an application's behavior.

4. The system of claim 1 wherein the first and second data elements comprise information about a user's actions.

5. The system of claim 1 wherein the first and second data elements further comprise information about a system response to the user's actions.

6. The system of claim 1 wherein the first and second data elements comprise information about a network.

7. The system of claim 1 wherein the second data element is compared with the first data element before the second data element is stored in the database.

8. The system of claim 1 wherein the second data element is compared with the first data element in real time.

9. The system of claim 1 further comprising a second computer agent executing on a second computer.

10. The system of claim 1 wherein the first agent notifies the second agent of the occurrence of the exceptional event.

1   11. The system of claim 1 wherein the notification is postponed while the first agent

2   is not able to communicate with the second agent.

1   12. The system of claim 1 wherein the notification is postponed until a period of low

2   latency and low utilization of a communications network connecting the first agent and the

3   second agent.

1   13. The system of claim 1 wherein the second agent generates and sends a response to

2   the first agent.

1   14. The system of claim 1 wherein the response comprises instructions to the first

2   agent related to the exceptional event.

1   15. The system of claim 1 wherein the first agent notifies a human user of the

2   occurrence of the exceptional event.

1   16. The system of claim 1 wherein the first agent notifies a server executing on a

2   second computer of the occurrence of the exceptional event.

1   17. The system of claim 1 further comprising a second database located on the second

2   computer storing the notification received from the first agent.

1   18. The system of claim 1 further comprising the server transmitting a response to the

2   agent.

1   19. The system of claim 1 further comprising the server storing the response in the

2   second database.

1   20. The system of claim 1 wherein the database comprises a relational database.

1   21. The system of claim 1 wherein the database is selectively pruned to reduce its

2   size.

1   22. A method of analyzing resources and events of a first computer comprising:

2   (a)   storing in a first database located within the first computer a first

3   dataset describing the resource and event characteristics of the first

4   computer at a first moment in time;

5   (b)   storing in the first database a second dataset describing the resource

6   and event characteristics of the first computer at a second moment in

7   time;

8   (c)   comparing the first dataset and the second dataset in order to

9   determine whether the differences indicate the occurrence of an

10   exceptional event; and

11   (d)   if an exceptional event has occurred, initiating an exception handling

12   routine.

1   23. The method of claim 1 wherein initiating an exception handling routine comprises

2 notifying a second computer of the exceptional event.

1   24. The method of claim 1 wherein initiating an exception handling routine comprises

2 notifying a human user of the exceptional event.

1   25. The method of claim 1 wherein the second computer comprises a server.

1   26. The method of claim 1, further comprising the step:

2   (e)   the second computer transmits a response to the first computer.

1   27. The method of claim 1, further comprising the step:

2   (f)   the second computer stores the notification of the exceptional event in

3   a second database.

1   28. The method of claim 1, further comprising the step:

2   (g)   the second computer stores the response in the second database.

1   29. A peer-to-peer system for monitoring the status of computers in a computer

2 network, the system comprising:

3   a plurality of computer agents, each agent capable of repeatedly storing status

4 information in a database at discrete points in time, each agent further capable of receiving,

5 storing in the database, and responding to queries made from any other agent;

6   wherein, each agent determines whether or not its current performance is consistent

7 with its past performance based upon a continuous, real-time analysis of the agent's own

8 database and, in the event that an agent determines that its current performance is

9 inconsistent with its past performance, addresses the inconsistency.

1   30. The system of claim 1, wherein addressing the inconsistency comprises querying

2 a second agent.

1   31. The system of claim 1, wherein addressing the inconsistency comprises querying

2 a human user.

1   32. The system of claim 1, wherein addressing the inconsistency comprises querying

2 a server.